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CULTURAL RESOURCE INVENTORY AND EVALUATION

THE LEWIS MINE

For

THE MONTANA DEPARTMENT OF STATE LANDS
1625 - 11th Avenue
Helena, Montana 59601

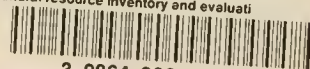
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CULTURAL RESOURCE INVENTORY AND EVALUATION

THE LEWIS MINE

For

THE MONTANA DEPARTMENT OF STATE LANDS
1625 - 11th Avenue
Helena, Montana 59601

BY

PAUL ANDERSON

Cultural Resource Division
Mineral Research Center
Montana Tech Foundation
P.O. Box 3708
Butte, Montana 50702

July 9, 1982

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INTRODUCTION

In February of 1982 the Mineral Research Center in Butte, Montana was contacted by the Montana Department of State Lands (DSL) and requested to perform a cultural resource inventory and evaluation of several abandoned coal mines in Cascade County, Montana (Figure 1).

In the interest of public safety and health the DSL plans to close all open adits, remove remaining structures and reclaim disturbed areas at the mines through removal, contouring and/or revegetation.

The following report will describe the physical setting, the historic background and the present state of the sites. An evaluation as to the eligibility of the sites to the National Register of Historic Places and a summary of projected impact on the sites will be given.

All field notes, photographs and supportive information resulting from the cultural resource fieldwork will be maintained at the Mineral Research Center.

Field investigation was conducted on July 19, 1982. The Principal Investigator and Project Director is Paul Anderson.

LEGAL DESCRIPTION OF THE LEWIS MINE

NE1/4 NE1/4 Section 26, T19N R6E

METHODOLOGY

The project area was carefully examined by the project team and the site was recorded, mapped and photographed. Undisturbed areas were systematically examined for possible prehistoric activities. Much of the ground was covered by dense vegetation making survey difficult. Due to the disturbed nature of the areas it would seem likely that had there been any prehistoric evidence it would have long since been buried or destroyed.

The state site files at the University of Montana; the Montana Historical Society's Historic Preservation Office files; and the Montana Fish and Game Commission's Historic Sites Compendium were searched for previously recorded sites in the area. No prehistoric sites were in the immediate vicinity of the DSL project mines. Historic sites in the area consist of other abandoned coal mines and will not be impacted by the current DSL mine reclamation project.

Documentary evidence on individual mines was sketchy at best. Most of the modern records of the mine safety inspection office were destroyed some time ago and there is very little in the way of records for specific mines during the boom period from 1890 to 1930. Personal interviews were conducted with several of the residents in the area who worked in the mines. Dates and names gained from these interviews should be considered tentative - understandable given the number of years that have elapsed since the mines were in operation.

GENERAL FEATURES AND PHYSIOGRAPHY OF THE PROJECT AREA

The Belt and Sand Coulee mines are located within the Great Falls coal field. This is a transitional region between the plains and the mountains and thus contains features characteristic of both topographies. The Great Falls coal field lies between the Highwood Mountains to the north and the Little Belt Mountains to the south. The area between the two mountain ranges is a high plateau sloping gently northward and traversed by numerous mountain streams which have created relatively deep, narrow valleys. This is especially true of the area west of Otter Creek. These streams have cut through and exposed the coal beds making them accessible to early development. The major drainages in this area include the Smith River, Sand Coulee, Belt Creek and Otter Creek (Fisher 1906).

The general elevation for the area is between 3,500 and 4,000 feet with the lowest point being along the Missouri River at about 3,000 feet while the highest summits of the Little Belt Mountains rise to altitudes of 4,500 to 5,000 feet.

Climate

The Great Falls region is characterized by a climate ranging from extremes of bitterly cold winters to short but hot summers. Weather patterns on a daily basis are highly variable and are shaped by such factors as topography, sun exposure, precipitation, temperature, and prevailing winds. The mountain ranges in the region affect the weather since air currents along the fronts carry rains in the summer and heavy snow falls in the winter which provide water for the area's streams, and moisture for crops making the area one of the nation's prime wheat producing regions. The region is also known for its "chinook" winds during the winter which are a frequent phenomenon. Average precipitation is 15 to 16 inches annually although perennial surface water is generally available throughout the region.

Vegetation

Vegetation types fall within the Northern Grassland zone with a large percentage of the area under cultivation for wheat and hay. Other species include: Rhus, chokecherry, snowberry, fringed sagewort, wild rye, Japanese brome, cheatgrass, quackgrass, bluebunch wheatgrass, bluegrass, cactus, green needlegrass, rubber rabbit brush, sagebrush and cottonwood trees.

Geology

The general geology of the Great Falls-Lewistown coal field is best described by Silverman and Harris as follows:

The lower part of the Morrison Formation, a terrestrial section consisting of 45 to 200 feet of varicolored mudstone and shale interbedded with lenses of gray sandstone and limestone, was deposited upon an emergent surface of marine Jurassic rocks. In a near-desert, interior-drainage environment, the upper Morrison and Kootenai rocks of central Montana then accumulated as lacustrine and flood-plain deposits. The upper Morrison consists of 5 to 50 feet of black shale intercalated with coal as much as 12 feet thick. The coal is depositionally discontinuous, having accumulated to greatest thickness in relatively small swamplands marginal to one or more lakes that occupied most of central Montana during late Morrison time.

The kinds of leaf compressions in black shale associated with coal indicate a xeric climate around the interior lakes, which eventually drained or filled, exposing the carbonaceous matter to subaerial erosion. After renewed uplift to the west, or increase in local aridity, or both, easterly flowing streams de-

posited and reworked the alluvial basal Kootenai sandstone over the entire area. In places small channel cutouts developed in the peat, but the porous organic remains produced a surface generally resistant to erosion. Regionally, basal Kootenai sandstone rests unconformably on upper Morrison beds, although the unconformity is relatively small. Compaction rather than erosional features characterize the Morrison-Kootenai contact.

The Great Falls-Lewistown field contains an estimated 750 million short tons of bituminous and subbituminous coal reserves in seams more than 14 inches thick. The nature and distribution of this coal make it amenable to future use of coal-steam-electric generation in central Montana (Silverman & Harris 1967:iv).

HISTORIC BACKGROUND

The presence of coal in the area was first observed by the Lewis and Clark expedition as they traveled up the Missouri River. On April 22, 1805 Lewis noted in his journal:

Coal or carbonated wood pumice stone lava and other mineral appearances still continue. the coal appears to be of better quality; I exposed a specimen of it to the fire and found that it birnt [sic] tolerably well, it afforded but little flame or smoke, but produced a hot and lasting fire (DeVoto 1953:98).

However, seventy-two years would elapse before this coal was first developed. A transplanted Pennsylvanian, John K. Castner, recognized the potential of the exposed coal seams along Belt Creek and filed claims on the bituminous coal-bearing lands in the area in 1877. For the next few years Castner operated a small "wagon" mine and hauled coal in mule team wagons to Fort Benton for use by the steamboats and the local community. Coal was also initially mined at nearby Sand Coulee during this period and was hauled by wagons to Fort Benton. By 1885 the combined production from the Sand Coulee and Belt mines was 1,900 tons, with 1,200 tons coming from Belt. The coal trade was apparently profitable since the Fort Benton "River Press" in September 1887 reported that large piles of coal from Belt and Sand Coulee were on the levees for use by the steamboats (Chadwick 1973; Cascade County Historical Society 1981; Stober 1979).

Major development of the Belt-Sand Coulee coal fields would not occur, however, until the coming of the railroad. In 1887 Jim Hill's St. Paul, Minneapolis, and Manitoba Railroad (soon to be called The Great Northern Railway) laid tracks all the way from Minot, North Dakota to the new town of Great Falls in one season. By 1888 a branch line had been opened to Sand Coulee and in 1891 the railroad passed through Belt on its way to the silver mines at Neihart. Coal production expanded to fill the increasing consumption by the railroads and the growing community of Great Falls. Coal demand increased even further when the Anaconda Company's copper

smelter was opened in Great Falls in 1892. When Castner first opened his Belt mine he built several experimental coke ovens. Later a hundred beehive coke ovens - each with a capacity of three tons - were in operation to supply the Great Falls smelter. Unfortunately, the benches of coking coal could not be economically separated from the non-coking coal and the ovens were closed down. During the 1950s these ovens were dismantled to salvage the bricks (Chadwick 1973; Stober 1979).

The major economic force in the Belt-Sand Coulee area was the Anaconda Mining Company which determined the demand for coal and also owned and operated several of the largest mines. In 1889 the Company bought the Castner Coal and Coke Company in Belt and operated it until 1913. At Sand Coulee the company acquired the Lochray Coal Company in 1914 and ran it for the next ten years (Morgan 1966).

Other major mines in the area would include the G. W. Merkle Mine near Belt and the Nelson Mine at Sand Coulee. These two mines furnished a large share of the coal used by the Great Northern Railroad. The railroad also operated its own mine at Stockett in the 1890s under a subsidiary, the Cottonwood Coal Company. This same company developed a mine at Giffen, a few miles south of Stockett, during the early 1930s which remained in production until 1946 when the Great Northern took the last of its steam locomotives out of service (Morgan 1966).

Almost all the area's mines were drift mines - so named because the coal could be reached by horizontal "drifts" driven into the coal from the side of a hill. The room and pillar method of mining the coal was generally used which was not the most efficient for coal recovery but did save on labor costs (Stober 1979).

The coal boom in the Belt and Sand Coulee area came to an end during the 1920s. The coal seams were running shallow with a greater percentage of rock, making it increasingly more expensive to mine. More important was the decline in demand. The Anaconda refinery ceased to use coal or coke for its furnaces; domestic users began to switch to natural gas and fuel oil; and the Great Northern Railroad began to use oil-burning steam locomotives and eventually would convert to diesel engines (Chadwick 1973).

By the 1930s all the major mines had closed except for the Cottonwood Coal Company's mine at Giffen. A few small wagon mines supplied coal for local domestic use during the Depression and there was a slight increase in demand during World War II. With the closing of the Giffen mine in 1946 coal production in the area virtually ceased.

The Great Falls field produced almost 36 million tons of coal during the period from 1885 to 1955 which was approximately 23 percent of the total state production. Nearly a third of the total tonnage was mined during the first two decades of this period. Over 15 million tons was produced during the life of the field by just three of the largest mines: the Castner-Anaconda mine at Belt (7.5 million tons over 25 years); the Lochray-Anaconda mine at Belt (2.3 million ton over 10 years); and the Cottonwood mine near Stockett (5.4 million tons over 15 years). The Great Falls field also employed most of the state's 3,000 to 4,000 coal miners (Silverman & Harris 1967).

Future energy needs may result in new coal development in the area but this would most likely be through strip mining methods employing far fewer men than did the underground mines. The underground coal mining boom of the 1910s and 1920s was a unique chapter of the region's history that probably will not be seen again.

SITE DESCRIPTION

Site Identification: 24CA91 - The Lewis Mine

Location: NE1/4 NE1/4 section 26, T19N R6E

Elevation: 1109 m

Site Area: 26,000 m²

Description: The Lewis Mine is located on the south facing hill on the north side of the mouth of Lewis Coulee. The site consists of coal slack dumps and a collapsed adit portal (Figure 2). Vegetation on the site consists of Rhus, cactus, bunch grasses and cottonwood trees. Water for the mining operation could have been obtained from the creek which flows through the mine site.

Structures and Cultural Materials: No structures from the original mine remain on the site. All that remains from the period when the mine was in operation are a number of coal slack dumps and the collapsed mine adit portal (Figure 3). The remains of a road extend up the coulee from 200 m. A 10" x 10" wood beam and a scatter of lumber debris is located at the southwestern corner of the site.

Historic Development: The land on which the site is located was first patented to Frank Lewis under a coal entry patent (#67) on August 6, 1895. Lewis was born in Norwich, Connecticut in 1853 and moved to Box Elder in Chouteau County, Montana in 1879. He ran sheep in the area for two years and then moved to Cora Creek in Cascade County in 1881 where he established a stage line from Cora Creek to Barker and Billings. In 1883 he went to Alaska where he prospected and mined for a year. This journey apparently caused Lewis to develop an interest in mining since in 1892 he homesteaded and opened the mine at the site. The mine employed about 20 men and shipped an average of 10 tons of coal to the B & M Smelter in Great Falls. Around 1910 the mine became the Calone and Johnson Mine and in 1913 it was involved in an incident where mine machinery was dynamited by miners who feared the loss of jobs. However, the mine continued to operate until the early 1940s and was said to produce some of the highest quality coal in the area (Stober 1979; Milos 1982; Williams 1982).

Evaluation: Very little remains on the site from the original mining operations other than the coal slack dumps and the adit portal. It is unlikely that further work on the site would reveal additional information on mining history and technology during this period.

National Register Statement: The site does not meet the eligibility requirements for listing on the National Register of Historic Places.

Management Recommendations: The Department of State Lands considers the ruins of the Lewis Mine to be a safety and health hazard and plans to close the adit portal and reclaim disturbed areas. This plan would not have a detrimental effect on the site since it is not eligible for listing on the National Register of Historic Places. The site has been recorded, mapped and photographed and no further work is recommended.

LEWIS COAL MINE

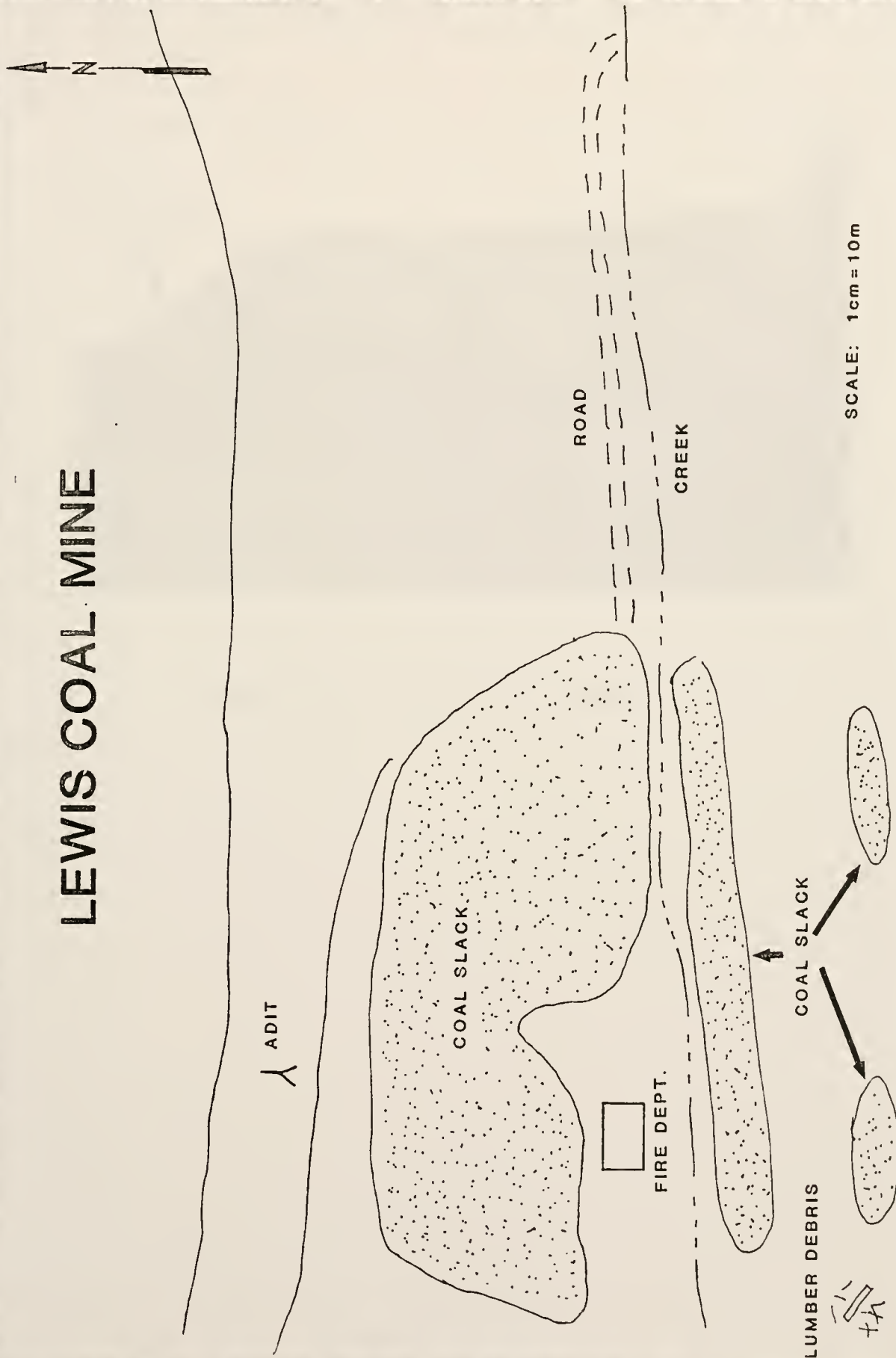


Figure 2



Figure 3. Mine area (view to north).

SUMMARY AND RECOMMENDATIONS

The Lewis Mine (24CA91) was recorded, mapped, photographed and historic records researched. The Lewis Mine is not recommended as eligible for listing on the National Register of Historic Places and therefore the reclamation plans of the State Department of Lands will not have a detrimental effect on the site. The site area was also carefully examined for prehistoric cultural resources. No prehistoric cultural remains were found.

The evaluation of this report concurs with the DSL that the open adit portal and coal slack dumps pose a threat to public health and safety and should be reclaimed or removed. It is recommended that the DSL plans be allowed to proceed on schedule. However, if subsurface prehistoric or historic cultural materials are revealed during the reclamation work, the Mineral Research Center in Butte and the Montana Historic Preservation Office in Helena should be notified immediately.

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and T19N R6E. .

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APPENDIX A

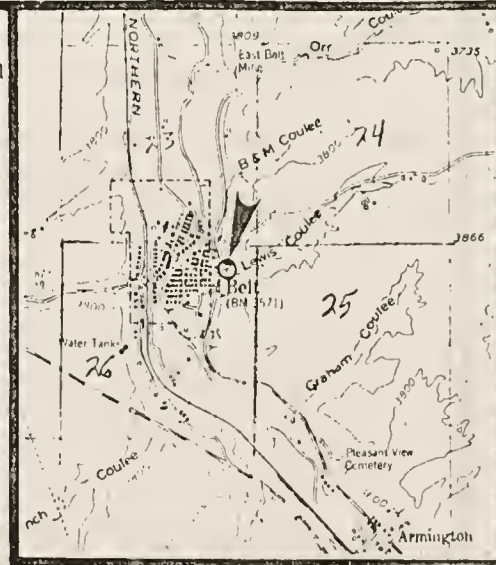


Cultural Resource Inventory

1. Site Number 24CA91		4. Site Name Lewis Mine	
2. County Cascade		5. Other Names For Site Calone and Johnson Mine	
3. State Montana			
6. City or Town Belt, Montana		Surface Ownership: 15 Federal ☐ State ☐ Private ☒ James Milos: Belt, MT	
7. Map Reference U.S.G.S. Belt, Mont. N4715-W11045/15 1956		16. Mineral Ownership: Federal ☐ State ☐ Private ☒ All Minerals ☐ Coal Only ☐	
8. Township & Range Number T19N R6E		17. Project Name Department of State Lands Reclamation Project	
9. Section Number 1/4 NE 1/4 NE 1/4 Sect. 26		18. National Register On ☐ Nominated ☐ Determined Eligible ☐ Recommended ☐ Need Data ☐ Not Eligible ☒	
10. Latitude 47° 23' 10"		19. Site located by & Date P. Anderson 7/26/82	
11. Longitude 110° 55' 25"		20. This Record by & Date P. Anderson 7/30/82	
12. U.T.M. Reference 12 505800 5247700		21. Revisions by & Date	
Zone Easting Northing		22. Site Category Historic ☒ Prehistoric ☐ Other specify ☐	
13. Publications		23. Site Status Survey ☐ Photo/map ☒ Tested ☐ Excavated ☐ Other specify ☐ Comment:	

14. Narrative of site location and access to site

The site is located on the north side of the mouth Lewis Coulee which is located on the east side of the town of Belt. The mine adit is directly north of the Belt Volunteer Fire Department building.



SETTING AND CONDITION OF SITE

Site Name Lewis Mine

Phytogeography

1. Elevation 1109 Meters 3640 Feet	5. General vegetative community stream bottom																											
2. Distance, direction and nature of nearest water source. Lewis Coulee creek runs through the site.	6. On-site vegetation <u>Rhus</u>, bunchgrasses, cactus and cotton-wood trees.																											
3. Soil (color, character, depth)																												
4. Geographic land form/ topography character/ slope / site faces: the site is on the south facing slope of a narrow coulee																												
Site condition 7. Natural deterioration <table style="width: 100%;"> <thead> <tr> <th>Degree</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>none _____</td> <td>sheetwash _____</td> </tr> <tr> <td>light _____</td> <td>gully _____</td> </tr> <tr> <td>moderate _____</td> <td>wind erosion _____</td> </tr> <tr> <td>heavy <u>X</u> _____</td> <td>animal disturb. _____</td> </tr> <tr> <td>complete _____</td> <td>natural weathering <u>X</u> _____</td> </tr> </tbody> </table>	Degree	Type	none _____	sheetwash _____	light _____	gully _____	moderate _____	wind erosion _____	heavy <u>X</u> _____	animal disturb. _____	complete _____	natural weathering <u>X</u> _____	8. Human Disturbance (real/potential) <table style="width: 100%;"> <thead> <tr> <th>Degree</th> <th>Type</th> <th>Distance From</th> </tr> </thead> <tbody> <tr> <td>light _____</td> <td>buildings _____</td> <td>_____</td> </tr> <tr> <td>moderate _____</td> <td>towers _____</td> <td>_____</td> </tr> <tr> <td>complete <u>X</u> _____</td> <td>roads _____</td> <td>_____</td> </tr> <tr> <td>unknown _____</td> <td></td> <td></td> </tr> </tbody> </table> Comments: The Department of State Lands plans to close open adits and reclaim the surface area of the site.	Degree	Type	Distance From	light _____	buildings _____	_____	moderate _____	towers _____	_____	complete <u>X</u> _____	roads _____	_____	unknown _____		
Degree	Type																											
none _____	sheetwash _____																											
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light _____	buildings _____	_____																										
moderate _____	towers _____	_____																										
complete <u>X</u> _____	roads _____	_____																										
unknown _____																												
9. Environmental/Economic threats to site <table style="width: 100%;"> <tbody> <tr> <td>_____ Private development</td> <td>_____ Public works project</td> </tr> <tr> <td>_____ Zoning</td> <td>_____ Mining</td> </tr> <tr> <td>_____ Vandalism, deterioration</td> <td><u>X</u> _____ Other (specify)</td> </tr> </tbody> </table> Comments: The DSL plans to eliminate dumps, close and backfill adits and reclaim the surface area of the site to remove threats to public health and safety.		_____ Private development	_____ Public works project	_____ Zoning	_____ Mining	_____ Vandalism, deterioration	<u>X</u> _____ Other (specify)																					
_____ Private development	_____ Public works project																											
_____ Zoning	_____ Mining																											
_____ Vandalism, deterioration	<u>X</u> _____ Other (specify)																											

HOMESTEAD/RANCH/FARM GENERAL FORM No.

1. General Description:(no. of buildings, general use, etc.)

none

Key to site sketch map and individual feature/building forms.

2. Historic Ownership:

(1)

(2)

(3)

3. Date of construction:

4. Use (present, original):

8. Names Associated with Title:

Name (last name first)	Date(s)	Deed Book Ref.
------------------------	---------	----------------

9. Tract Book Reference:

Name	Type of Entry HE, CE, DLE, other	Serial No.	Patent No.	Representation on GLO Plat
Lewis, Frank	Coal Entry		#67 8/6/1895	

10. Noted events associated with property or with persons associated with property:

1. Photos:

Accession

Description

Direction

1. Proof #1 - photos 14-20

2. _____

3. _____

4. _____

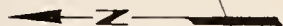
2. National Register Statement:

The original mine structures have been destroyed or removed and all that remains on the site are coal slack dumps and one adit entrance. The site lacks integrity and thus does not meet the criteria for nomination to the National Register of Historic Places.

3. Recommendations:

The Department of State Lands plans to backfill and contour the adit entrance. The dumps will be eliminated and the site will be contoured and revegetated. The site has been recorded, mapped and photographed and further work on the site would not reveal additional information. No further field work is recommended.

LEWIS COAL MINE



ADIT

COAL SLACK

FIRE DEPT.

ROAD

CREEK

LUMBER DEBRIS

COAL SLACK

SCALE: 1cm = 10m

